DEPARTMENT OF DEFENCE
DEFENCE SCIENCE & TECHNOLOGY ORGANISATION
DSTO

HFI/HSI in Policy and Practice: Australian Perspective

Maritime Platforms Division
DSTO

Presentation Outline

- Policy
- The current acquisition process
- The ‘new’ RAN organisation
- HSI/HFI Stakeholders
- Acquisition examples
- Lessons Learnt
- The Future

HFI/HSI in Policy and Practice

- Policy
  - Human factors integration is an essential element in the capability management systems
  - All new acquisition projects will take into account whole of life costs, including personnel costs

HFI/HSI in Policy and Practice

- Practice
  - some projects successfully incorporate HFI/HSI systems
  - standards
  - success depends on how early HFI/HSI is incorporated in the capability development process
  - left to supplier

Capability Development and Acquisition

- Oberon, Adams Class
- FFG-7
- ANZACS
- COLLINS
- HUON
- Replacement Patrol Boats
- Kidd Class

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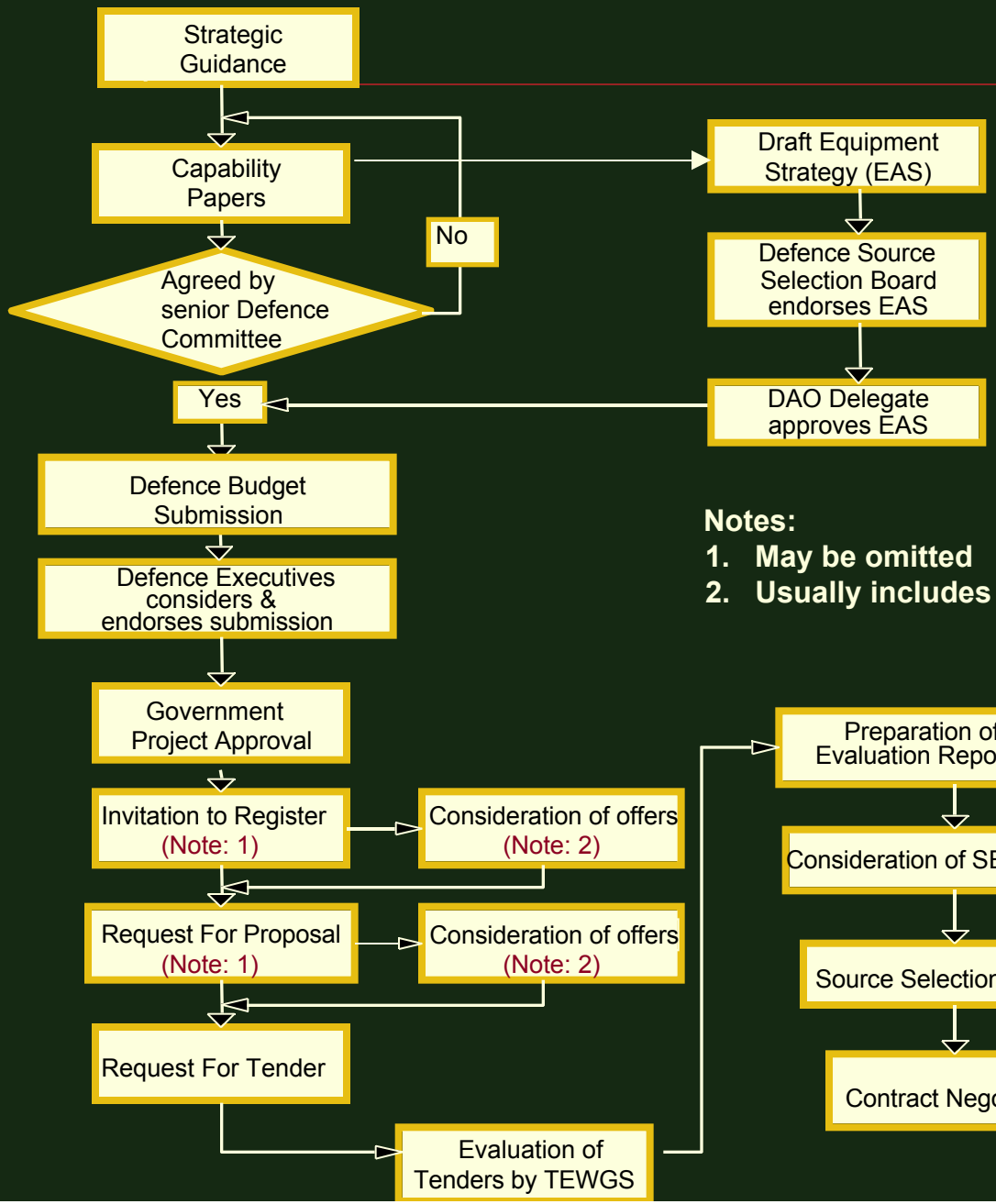
ADO acquisition processes



Notes:

1. **May be omitted**
2. **Usually includes short listing**

The acquisition project life-cycle

HFI/HSI Integration

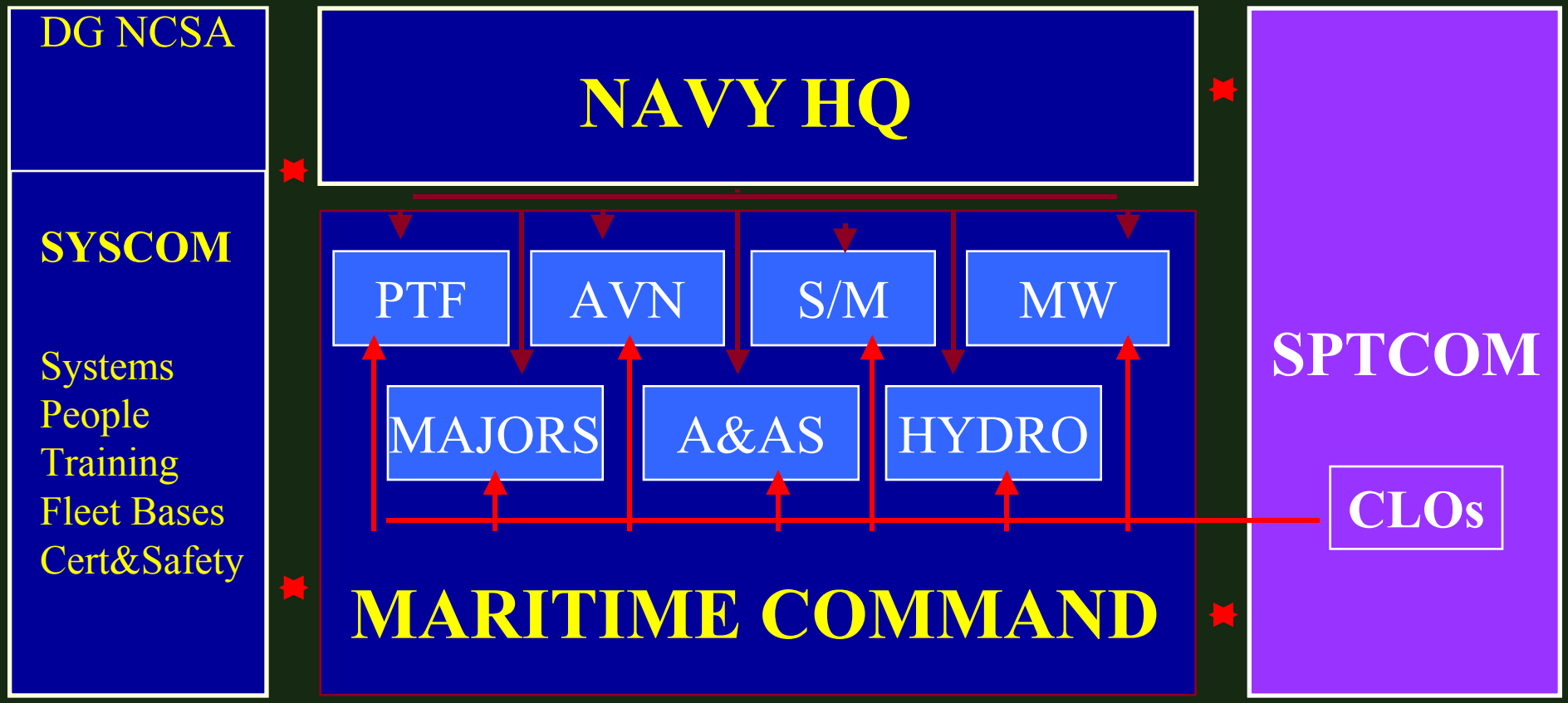
- Requirements definition and capture
- Concept exploration
- Engineering design
- Manufacture
- Test and evaluation and acceptance into service
- Operation and management (or in-service support)
- Disposal

The Way it Was

- Capability requirement – Maritime development ADHQ
- Capability Acquisition – Defence Acquisition Organisation
- Operational management – Maritime Commander
- Capability Management – Chief of Navy
- Support – Support Command Australia
  - Human Factors standards

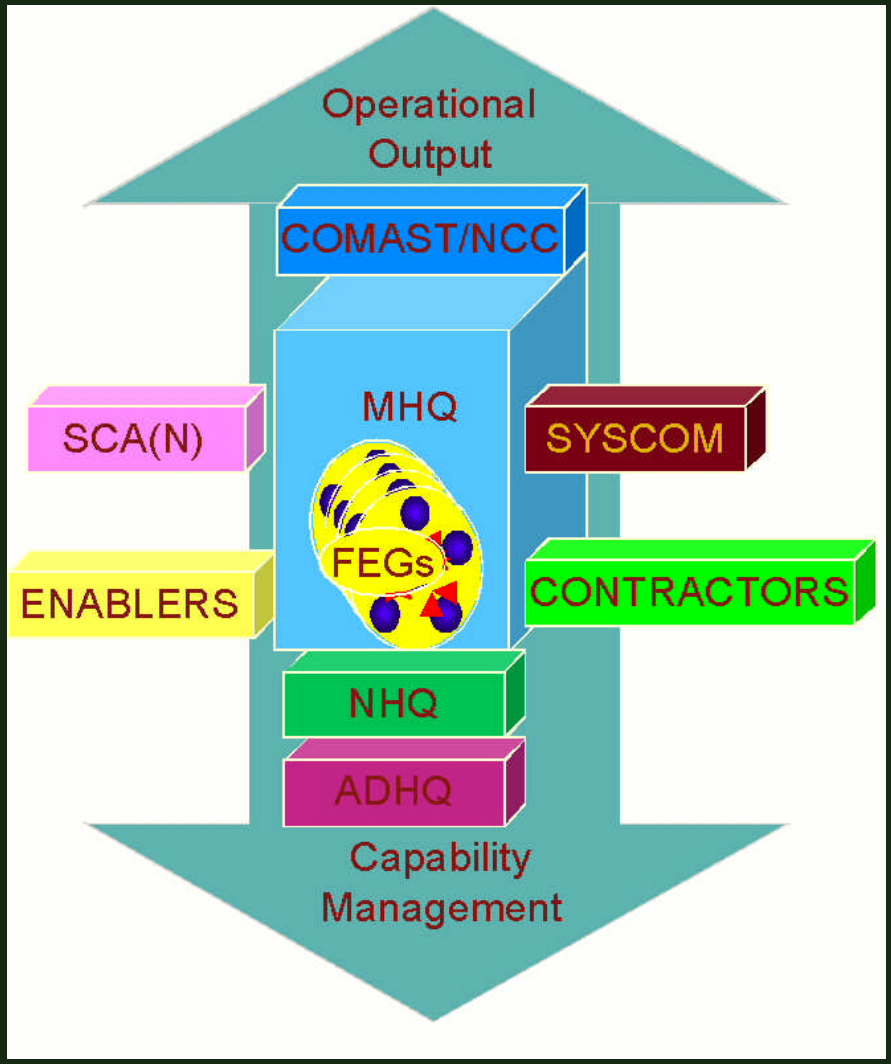
Extremely Stovepiped

The New Navy Organisation



Relationship with Acquisition Organisation is evolving

New Organisation - New Attitudes to HFI/HSI?



HFI/HSI Practitioners

- NAVSYSCOM – Human Factors Group
  - HF Standards
  - ergonomics/ anthropometrics
- Defence Personnel Executive
  - Workforce planning and establishments (Navy) – Future Requirements
  - Crew estimates for future capability
- DSTO
  - Maritime Operations Division
  - Maritime Platforms Division

Airborne Early Warning and Control

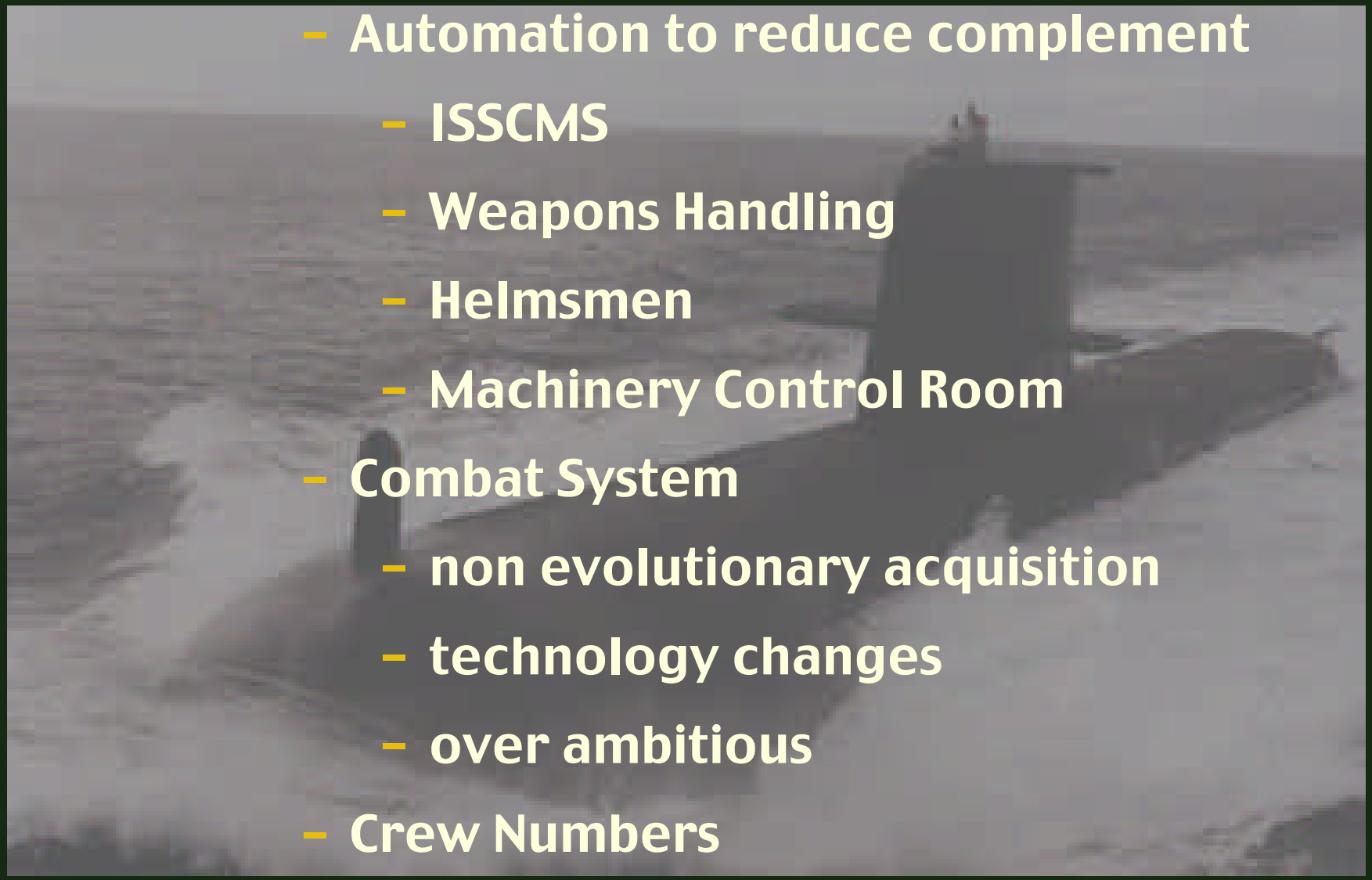
Project Wedgetail

- evaluation of tendered solutions
- HMI evaluation
- Crew levels/workload
- operational effectiveness

Offshore Patrol Combatant

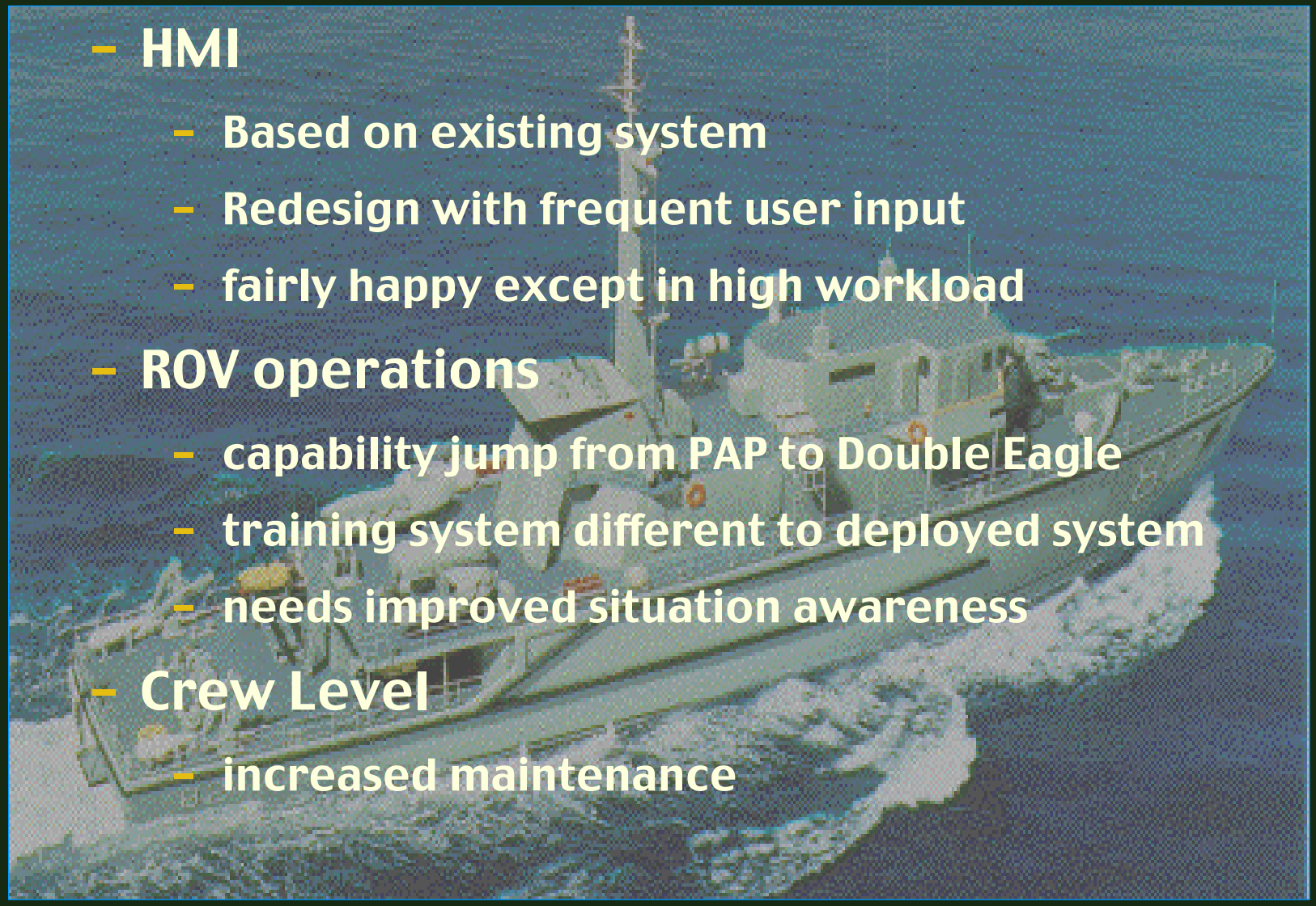
- Mission Manpower Model
- Crew levels
- multi tasking
- resource usage

Collins Class Submarine



- Automation to reduce complement
  - ISSCMS
  - Weapons Handling
  - Helmsmen
  - Machinery Control Room
- Combat System
  - non evolutionary acquisition
  - technology changes
  - over ambitious
- Crew Numbers

Huon Class Minehunter



- HMI
  - Based on existing system
  - Redesign with frequent user input
  - fairly happy except in high workload
- ROV operations
  - capability jump from PAP to Double Eagle
  - training system different to deployed system
  - needs improved situation awareness
- Crew Level
  - increased maintenance

HMAS Jervis Bay

- Built to commercial standards
  - highly automated
- Changed operating profile and duration
- Issues raised
  - Crew workload
  - Kinetosis effects

What is changing

- FEG Commanders recognise HFI/HSI as a major component of effective capability
- Crew levels and workload need to be addressed as FEGs will have difficulty in
  - recruitment levels and quality
  - cost of ownership
  - quality of life
- Purchaser/provider model - RAN funding
- Increased emphasis in DSTO on Maritime HFI/HSI
  - translation into extra staff, finds ?
- Requirements workshop

The Future

- Better articulation of appropriate standards
- Better requirements analysis
- Better specification of MOEs/MOPs
- Better evaluation techniques
- Demonstrable benefits